SUPERIOR PERFORMANCE & RELIABILITY

HIGH-SPEED TURBINE GRADE H704

HELWIG® CARBON PRODUCTS, INC.

helwigcarbon.com/industries/traditional-power-generation/

Helwig Grade H704 is specifically developed for high-speed turbo generators.

Only a select few grades worldwide are designed to perform optimally under high peripheral speed conditions.

With its superior low-friction characteristics, H704 is trusted by end users and installed on ABB, GE, and Westinghouse units globally, and provides:

- Specialized Materials for High-Speed Operations
- Robust Inventory of Brushes in Stock & Fast Lead Times for Made-to-Order Brushes
- Minimized & Even Wear
- Low Friction
- Extended Lifespan
- Lower Temperatures
- Balanced Current Distribution
- Excellent Electrical Contact
- Expert Application Engineering Support
- Unwavering Consistent Quality

Our grades undergo continuous testing and performance comparisons to ensure they meet or exceed industry standards, consistently outperforming competitors. See more data on reverse side.

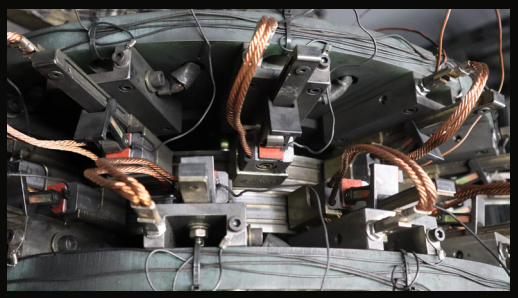
When you choose Helwig, you're not just purchasing a product—you're gaining direct access to our team of highly qualified engineers. With a diverse staff of Electrical, Mechanical, and Chemical Engineers all working together under one roof, we provide you with unparalleled expertise and support.

As leaders in carbon technology and sliding electrical contact applications, Helwig is at the forefront of industry innovation. Many of our groundbreaking advancements and rigorous internal brush testing protocols have set new standards across the industry, ensuring that you receive the most reliable and cutting-edge solutions available.

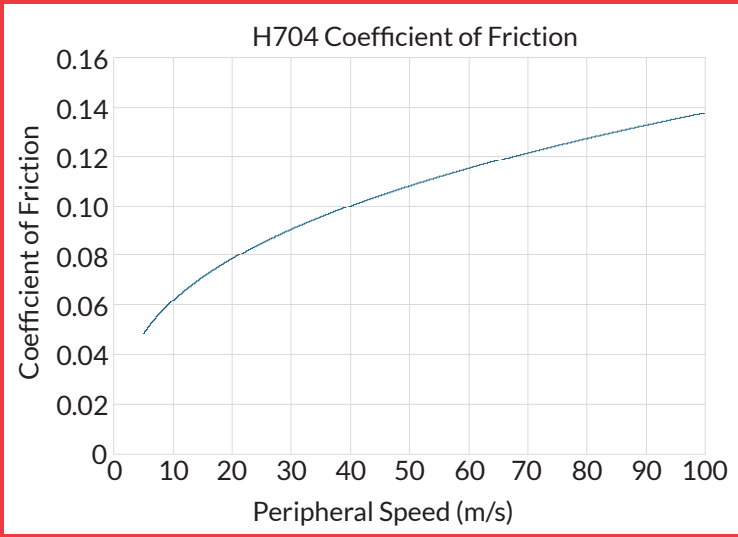
MADE IN USA

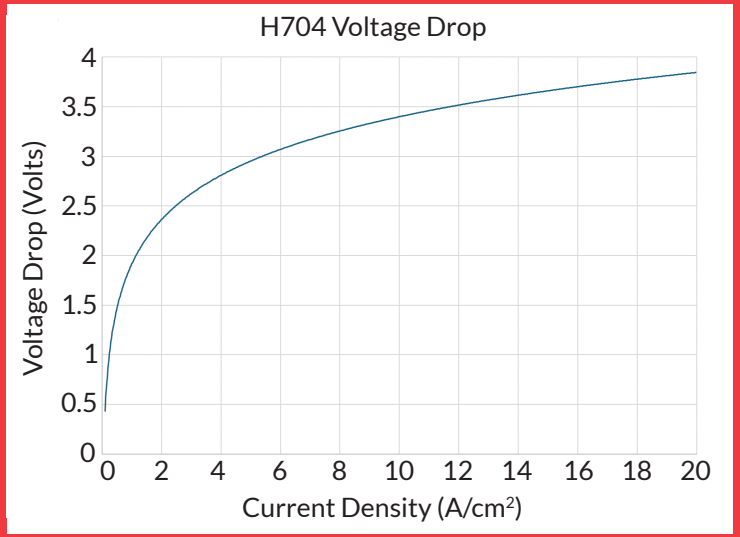
Helwig Carbon Grade H704 Specifications

	RESISTIVITY		SHORE	STRENGTH					RATED CURRENT	
GRADE	OHM-IN	uOHM-M	HARD	PSI	N/mm²	VD	CF	FILM#	Amp/in²	Amp/cm²
H704	0.0006	15	15	1000	6.9	M	L	1	60	9.3



Performance Graphs





Compare H704 to Competitor Grade

Properties

Grade Name	H704	Competitor
Type/Classification	Graphite	Graphite
Metal Content %	0%	0%
Resistivity	0.0006 Ω-in 15 μΩ-m	0.0007 Ω-in 18 μΩ-m
Shore Hardness	15 Sc	20 Sc
Flexural Strength	1000 PSI 6.92 N/mm²	750 PSI 5.19 N/mm²
Coeff of Friction	Low (<0.20)	Low (<0.22)
Max Speed	180 mph 80 m/s	180 mph 80 m/s
Current Density	64.5 A/in² 10 A/cm²	64.5 A/in² 10 A/cm²

Test Results

Eight (8) Brushes of Each Grade Tested at Operating Conditions 3600 RPM (76.6 m/s) 40 A/in² (6.2 A/cm²)

Parameter	H704	Competitor
Maximum Temperature	278.6°F 137°C	230°F 110°C
Current Distribution	52.5-69.5 Amps DC	47.7-70.5 Amps DC
Voltage Drop	3.2 VDC	2.94 VDC
Coefficient of Friction	0.14	0.15
Positive Brush Wear	**0.0009 in/hr 23 mm/1000hr**	0.0015 in/hr 37.5 mm/1000hr
Negative Brush Wear	**0.0006 in/hr. 15.2 mm/1000hr**	0.0007 in/hr. 18.3 mm/1000hr

H704 is trusted in high-speed turbine applications across the U.S. and worldwide.

Contact Helwig for More Information:

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